

WHAT IS CLAIMED IS:

1 1. A telecommunications device for processing data, wherein the device
2 includes a plurality of data processors, the device comprising:
3 a plurality of control processors, each control processor configured to manage
4 data routing paths for routing data between data processors in the plurality of data processors;
5 and
6 a plurality of logical nodes, wherein each logical node includes one or more
7 data processors in the telecommunications device and is associated with a control processor
8 in the plurality of control processor, wherein a logical node routes data using the one or more
9 data processors included in the logical node according to the data routing paths for routing
10 data associated with each logical data processor.

1 2. The device of claim 1, further comprising a power source configured to
2 power the plurality of logical nodes.

1 3. The device of claim 1, further comprising a plurality of physical slots,
2 wherein each of the plurality of data processors are coupled to a physical slot in the plurality
3 of physical slots.

1 4. The device of claim 3, wherein a data path from a first physical slot
2 location to a second physical slot location in the device is mapped to a third physical slot
3 location to a fourth physical slot location.

1 5. The device of claim 1, wherein each control processor and its
2 associated logical node is configured to transfer data for a separate entity.

1 6. A telecommunications shelf including a plurality of slots configured to
2 connect to data processors, the shelf comprising:
3 a first logical shelf including a first set of one or more data processors,
4 wherein each data processor in the first set is connected to a first set of one or more slots in
5 the plurality of slots; and
6 a second logical shelf including a second set of one or more data processors,
7 wherein each data processor in the second set is connected to a second set of one or more
8 slots in the plurality of slots,

9 wherein the first logical shelf is associated with a first entity that transfers data
10 using the first set of one or more data processors and second logical shelf is associated with a
11 second entity that transfers data using the second set of one or more data processors.

1 7. The telecommunications shelf of claim 6, further comprising:
2 a first control processor associated with the first logical shelf; and
3 a second control processor associated with the second logical shelf.

1 8. The telecommunications shelf of claim 7, wherein the first control
2 processor is configured to manage data routing paths for the first entity and the second
3 control processor is configured to manage data routing paths for the second entity.

1 9. The telecommunications shelf of claim 6, wherein the first control
2 processor is configured to map data routing paths based on a location of the first set of slots
3 in the telecommunications shelf.

1 10. The telecommunications shelf of claim 6, wherein the second control
2 processor is configured to map data routing paths based on a location of the second set of
3 slots in the telecommunications shelf.

1 11. The telecommunications shelf of claim 6, further comprising a power
2 source configured to provide power to the first and second set of one or more data planes in
3 the first and second logical shelves.

1 12. A method for routing data using a telecommunications device that
2 includes a plurality of data processors, the method comprising:
3 configuring a first set of one or more data processors in the plurality of data
4 processors for a first logical node in the telecommunications device;
5 configuring a second set of one or more data processors in the plurality of data
6 processors for a second logical node in the telecommunications device;
7 receiving data associated with a first entity;
8 routing the data using the one or more data processors in the first logical node;
9 receiving data associated with a second entity; and
10 routing the data using the one or more data processors in the second logical
11 node.

1 13. The method of claim 12, wherein receiving data associated with the
2 first entity comprises receiving data for a first routing data path from a first location to a
3 second location in the telecommunications device, and further comprising:
4 determining a third and fourth location in the telecommunications device in
5 which to route the received data,
6 wherein routing the data comprises routing the data from a data processor in
7 the third location to a data processor in the fourth location, the third and fourth data
8 processors included in the first set of data processors.

1 14. The method of claim 13, wherein receiving data associated with the
2 second entity comprises receiving data for a second routing data path from a fifth location to
3 a sixth location in the telecommunications device, and further comprising:
4 determining a seventh and eighth location in the telecommunications device in
5 which to route the received data,
6 wherein routing the data comprises routing the data from a data processor in
7 the seventh location to a data processor in the eighth location, the seventh and eighth data
8 processors included in the second set of data processors.

1 15. The method of claim 12, further comprising:
2 configuring a first control processor associated with the first logical node; and
3 configuring a second control processor associated with the second logical
4 node.

1 16. The method of claim 15, wherein the first control processor manages
2 data routing paths for the first entity and the second control processor manages data routing
3 paths for the second entity.